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ABSTRACT

This instructor's lesson plan guide on pediatrics and neonatal transport is one of fifteen modules designed for use in the training of emergency medical technicians (paramedics). Five units of study are presented: (1) approach to the pediatric patient including patient assessment; (2) pathophysiology and management of problems unique to the pediatric age group including respiratory problems, the sudden infant death syndrome, seizures, and the battered child; (3) techniques of management for cardiopulmonary resuscitation, endotracheal intubation, and initiating intravenous therapy on a pediatric patient; (4) neonatal transport; and (5) clinical experience in the pediatric unit. Each unit contains these elements: behavioral objectives, teaching procedures, a content outline, demonstration outline, lists of needed equipment and materials, and guidelines for student practice activities. Check sheets are provided for evaluating student skills. (It is suggested that each module can be presented individually or combined with other modules to construct a course for a selected group of students. CE 017 514 is a course guide for use in planning and implementing the total training program.) (JH)

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National Training Course
EMERGENCY MEDICAL TECHNICIAN
PARAMEDIC
INSTRUCTOR'S LESSON PLANS

Module – XII

Pediatrics and Neonatal

CE 017 526

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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U.S. Department of Transportation / National Highway Traffic Safety Administration

National Training Course

EMERGENCY MEDICAL TECHNICIAN PARAMEDIC

INSTRUCTOR'S LESSON PLANS

Module - XII

Pediatrics and Neonatal

CE 017 526

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HOW TO USE THE INSTRUCTOR LESSON PLANS

NOTES

The *Instructor Lesson Plans* are guides for teaching an advanced-level training program for emergency medical technicians. The *Plans* cannot be used by the instructor to develop the competency to conduct the program; the instructor should have this as a prerequisite to teaching the course.

The *Instructor Lesson Plans* are comprised of 15 modules, each containing the information and instructions needed to conduct a program on a particular subject. Each module can be used by itself or in concert with other modules.

Each module is subdivided into instructional units that deal with a particular segment of the module subject. Generally, the units contain the following components:

- *Performance Objectives.* These are classified as knowledge (K) objectives or skill (S) objectives. They are written in behavioral terms so they can be evaluated either through observation of student activities or through results obtained under specified conditions.
- *Unit Activities.* Reading assignments, reference materials, and outside activities are presented for both the students and the instructor. If the activities are identical, only the instructor's activities are presented.
- *Equipment and Materials.* Educational equipment includes chalkboard, overhead projector, slide projector, and screen. Medical equipment and materials required are drawn from those listed in Appendix F of the *Course Guide*.

NOTES

- *Content Outline.* This presents the topics to be covered during the presentation of the unit. Where appropriate, it is divided into single skills or concepts. This approach gives the instructor the flexibility to add or delete specific skills and information. The content outline also provides directions to the instructor indicating when the use of demonstrations or group discussions would be most appropriate.

  Because the units are designed to be taught by technically competent instructors, the content outlines are not specific; they only enumerate topics and subtopics. It is expected that the instructor's skill and knowledge will supplement the depth of the course content outline. The instructor is encouraged to prepare additional notes.

- *Demonstration Outlines.* These are designed to present procedural steps that are important in performing the particular skill or calculation. Steps that are critical or that may lead to common errors are emphasized. Where critical steps exist, these outlines suggest what should be demonstrated.
- *Practice Sessions.* These sessions serve as guides to activities to be performed by students applying the skills. They may be performed in the classroom or assigned as homework. During classroom practice sessions, the instructor will be available to observe and correct student performance and to answer any questions.
- *Skill Evaluations.* The skill evaluation sheets provide checkpoints for the instructor to use to insure that students are following appropriate procedures or sequences. Skill evaluation sheets also provide a convenient method for feedback to students having particular problems with a given skill, and for monitoring a student's progress in attaining skill objectives.

  The skill evaluation should occur only after the students have had an opportunity to practice the skill under the supervision of the instructor. The skill evaluation sheets can be distributed during, or before, the demonstration or practice session. Thus, they can be used as a job aid during practice. They should not be used, however, as a job aid while the student is being evaluated. The sheets are designed to provide a learning and evaluation tool

and are not intended to mandate performance in the field in a set manner, irrespective of the patient's condition or situation.

Satisfactory performance of a given skill is defined as the correct performance of all steps in the proper sequence. The instructor's judgment is required to define correct performance and sequence of steps in a skill. Skill evaluations may be repeated at intervals throughout the course to assess skill decay and the need for remedial practice. Some instructors may wish to test skills immediately after they have been learned and again at the conclusion of the course.

The alphanumeric coding system is used to identify the various modules and units. When you see, for example, in Module II, **3.6.1.K**, the **3** indicates the unit, the **6** indicates the main instructional topic, the **1** indicates the subsection of the major topic outlined in **3.6**, and the **K** indicates the teaching objective (in this case, knowledge).

To illustrate further, **3.6.1.K** would translate into:

3 = Unit number
6 = The main topic of the instructional section (The first two numbers—e.g., **3.6**—refer to a major heading in the unit content outline.)
1 = A subsection of the major topic outlined in **3.6** (This number relates to the number of objectives listed under skill or knowledge objectives and not to the content outline.)
K = Knowledge objective
S = Skill objective

The three-digit reference numbers (e.g., **3.6.1**) within each module refer to the topical section in that module only. For example, in Module II, any topical heading with **3.6** as the first two digits refers to the discussion of the components of patient assessment in Unit 3.

A visual presentation of Unit 3, by Module II, of the coding system is presented on the following pages.

NOTES

SAMPLE PAGE

CODING SYSTEM EXAMPLES

NOTES

- Abdomen
- Extremities

3.6.1.K Given a situation describing a patient with a possible illness or injury who may or may not be able to communicate, the student should be able to describe the procedure for evaluating the patient described. Minimally, the student should include the appropriate primary assessment and specify the order of the four components of the secondary assessment and the areas of the assessment that would be emphasized.

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the demonstration, auscultation of the lung, heart, and abdominal sounds.

3.6.1.S Given a student posing as a communicative patient, the student should be able to demonstrate the procedure for conducting a patient assessment when the patient is suspected of having the following:

SAMPLE PAGE

CODING SYSTEM EXAMPLES

NOTES

8. Practice Session 3

3.6. Four components of assessment (order)

A. If the patient can communicate, determine if he has a medical or trauma-related problem.
   1. If a medical problem, the general order should be:
      a. Evaluate the diagnostic and vital signs.
      b. Develop the patient's history.
      c. Examine for a medical problem.

Skill Evaluation 3.6.1.S: Assessment of a Communicative Patient With a Suspected Trauma-Related Problem

Place an "X" in the appropriate column to indicate steps that are incorrect, out of sequence, or omitted. The student should be given three attempts to perform the skill.

Equipment

Student posing as a victim
Stethoscope

Clinical Training

To present this program, it will be necessary to have access to the clinical units listed below. If a unit is not available, adjustments should be made to insure that the activities proposed for that unit are included in others. Specific guidelines for the clinical units are included in the modules. The student's training should be supervised in each of the following clinical areas:

- Emergency department
- Intensive care unit/coronary care unit
- Operating/recovery room
- Intravenous (IV) team
- Pediatric unit
- Labor suite/delivery room/newborn nursery
- Psychiatric unit
- Morgue
- Mobile intensive care unit

Sample forms for maintaining student activity records are included in the *Instructor Lesson Plans*. The forms are designed so that the medical director can determine the number of times, and how successfully, a student has performed a skill. The medical director also will be able to determine how much time the student needed to become proficient in the skill. Further, the medical director will be able to evaluate student performance under a number of preceptors, because certain skills are repeated in various clinical units (e.g., initiating an IV is performed by the student with the IV team and in the emergency department and intensive care unit).

Although the clinical experience is listed with the module, it need not be presented each time, even if a number of modules are being presented.

Testing and Evaluating the Student

It is recommended that each student be evaluated on proficiency of skill and knowledge at the completion of each module. Skill evaluation sheets have been provided for each skill in each unit. These sheets can be used as guides for evaluating the student's skill proficiency. The evaluation of the knowledge objectives is left to the discretion of the instructor, according to predetermined objectives.

NOTES

Testing of knowledge should stress areas of clinical relevance over basic science. No matter what type of evaluation system is used, students should be kept informed of their progress and should be given additional activities to supplement weak areas.

As previously stated, the emphasis is on student competency, rather than on the total number of hours the student is involved in the program. Thus, it is possible for the student to be tested and given credit for any module. The medical director should not assume the student's competency simply because of prior training, but should develop an evaluation method to determine the student's proficiency based on first-hand observation and experience. With this type of method, it is possible for students to receive credit for prior training experience. This would be especially applicable for those modules that are primarily a review of skills concerned with Emergency Medical Technician-Ambulance; for example, soft-tissue injuries and rescue.

NOTES

MODULE XII PEDIATRICS AND NEONATAL TRANSPORT

INTRODUCTION

Prerequisites

The student must have successfully completed the following modules:

I. The Emergency Medical Technician, His Role, Responsibilities, and Training

II. Human Systems and Patient Assessment

III. Shock and Fluid Therapy

Description of Module

Following is a summary of the topics discussed in this module:

Unit 1. Approach to the Pediatric Patient: Discusses the variations in performing the patient assessment of a pediatric patient. It also discusses the importance of the parents in such a situation.

Unit 2. Pathophysiology and Management: Discusses the recognition and management of various problems unique to the pediatric age group. Specifically, the unit includes a discussion of respiratory problems, the sudden infant death syndrome, seizures, and the battered child.

Unit 3. Techniques of Management: Reviews the procedures for cardiopulmonary resuscitation, endotracheal intubation, and initiating intravenous therapy on a pediatric patient.

Unit 4. Neonatal Transport: Discusses briefly the components of a training program for Emergency Medical Technicians (EMT's) who are to be involved in neonatal transport.

Unit 5. Clinical Experience: Includes experience in the pediatric unit.

NOTES

UNIT 1 emt-p

APPROACH TO THE PEDIATRIC PATIENT

NOTES

Knowledge Objectives

After completing this module, the student should be able to correctly respond to at least 80 percent* of the following:

1.2.1.K Given a list of statements, the student should be able to select the one that best describes the purpose of taking a history of a pediatric patient.

1.2.2.K Given a list of statements, the student should be able to select the one that best describes the value of using the child as a good source of information.

1.2.3.K Given a list of age groups of pediatric patients, the student should be able to state whether he expects to find a patient in the designated age group generally cooperative or uncooperative.

1.2.4.K Given an age group of pediatric patients and a list of statements describing special procedures that might be employed, the student should be able to select the appropriate procedure for the age group: physical assessment conducted from toe to head is appropriate for children up through 3 years of age.

*The selection of 80 percent as a passing criterion is arbitrary and can be modified. NOTE: Some aspects should require 100 percent accuracy and failure on any such aspects should constitute cause for failure, for example, drugs and appropriate dosages in life-threatening situations. Use of inappropriate drug or dosage is in itself life threatening.

1.3.1.K Given a list of statements describing the image of an EMT arriving at the scene of an accident involving a pediatric patient of a specified age, the student should be able to select the statement that best describes the child's perception of the EMT.

1.3.2.K Given a list of statements describing various characteristics of children, the student should be able to select the appropriate age group that is associated with the characteristic.

1.3.3.K Given a list of procedures, the student should be able to select those procedures that are appropriate for a specified age group.

NOTES

Instructor Activities

Assign the material referred to below during the class period immediately before beginning the unit:

- Chapter 12, Unit 1, of the *Text*
- Knowledge objectives for this unit

Prepare a lecture and discussion session following the content outline on page XII-5. Provide any slides, overlays, or diagrams. Include the following activities:

- Review the knowledge objectives.
- Inform the students there will be no demonstrations or practice sessions in this unit.
- Present case studies of pediatric patients in various age groups, emphasizing the points that are different in assessing a pediatric and an adult patient.
- Ask for questions.

Test the students upon completion of the entire module, using the objectives as a guide.

Equipment and Materials

Equipment—Educational

Chalkboard and chalk

Materials

Knowledge objectives (optional)
Text

Content Outline

Introduction

- Review the knowledge objectives.
- Introduce the topics to be discussed:

  — Approach to the pediatric patient
  — Patient assessment
    a. History taking
    b. Physical examination
  — Special considerations

1.1. Approach to the pediatric patient

A. Point out that the pediatric patient presents a challenge in evaluation and management.
   1. Child's perceptions of problem, surroundings, etc., vary
   2. Child, because of age, may not be able to communicate

B. Discuss goals of management of a pediatric patient.
   1. Similar to an adult
      a. Perform a patient assessment.
      b. Identify the problem.
      c. Treat the problems.
   2. Usually achieved through a patient and understanding approach

NOTES

1.2. Patient assessment

A. History taking

1. Point out that the goals are the same for the child as for the adult.
   a. Gather information.
   b. Establish a relationship with patient.
2. Point out that the parents usually are a good source of information.
3. Point out that the child is often a good source of information.
   a. Point out that the school-age child will usually be accurate in his descriptions.
   b. Point out that an EMT should allow the child to express his opinion; he should not only react to the parents' description.
4. Review the steps of history taking (Module II).

B. Physical examination

1. Point out that the goals are the same for the child as for the adult.
2. Point out that an EMT should perform primary assessment and treat life-threatening problems as usual.
3. Point out that the procedure for secondary assesament varies somewhat according to the age. Review the following by age group:
   a. Infant (under 6 months old)
      (1) Infant probably will not object to being disrobed.
      (2) Infant should be distracted by verbal stimulation; that is, cooing or pleasant noises.
      (3) Physical assessment should be conducted from *toe to head.*
   b. Infant (6 to 12 months old)
      (1) Infant probably will not object to having his clothes removed.
      (2) Infant will object to removal from his mother—may be advantageous to examine the child while he sits in his mother's lap.
      (3) Infant should be distracted by verbal stimulation; that is, cooing or pleasant noises.
      (4) Physical assessment should be conducted from toe to head.

NOTES

c. Child (2 to 3 years old)
   (1) Point out that this is usually a difficult child to deal with.
   (2) Point out that he will not allow his clothing to be removed.
   (3) Point out that he will not want to be touched by a stranger.
   (4) Point out that he is usually frightened by and not easily swayed by an EMT's good intentions.
   (5) Point out that an EMT should perform the examination as quickly as possible—remembering priorities.

d. Child (4 to 5 years old)
   (1) Point out that this child is usually cooperative, except if very frightened.
   (2) Point out that an EMT should perform the survey as for an adult.
   (3) Point out that this child is interested in "helping out," that is, listening to his own heartbeat.

e. Child (school age)
   (1) Point out that this child is usually very cooperative.
   (2) Point out that this child appreciates being treated with respect.
   (3) Point out that he is interested in what is being done—explain the procedures; for example, "This is a stethoscope, and it helps me listen to the sounds your heart makes."
   (4) Point out that he is interested in "helping out," that is, listening to his own heartbeat.

f. Adolescent
   (1) Point out that this patient is usually cooperative.
   (2) Point out that this patient is concerned about physical integrity--it is helpful to reassure him.
   (3) Point out that an EMT should perform the survey as if he were assessing an adult.

1.3. Ill or injured child: special considerations

A. Point out that, in general, an injured/ill child is frightened by:

NOTES

1. The disability or discomfort
2. Presence of strangers—with "evil" intentions
3. Possibility of being separated from his parents
4. Atmosphere of panic, confusion, distress

B. Discuss the general principles when dealing with a child:
   1. Be calm, patient, and gentle.
   2. Be honest, do not tell the child that something will not hurt if it will.
   3. Do *not* separate the child from the parents.

C. Discuss considerations (by age group).
   1. Infant
      a. Remember, there is no way of assessing how the infant perceives or remembers pain.
      b. Do not separate him from the parent.
   2. Child (1 to 3 years old)
      a. Point out that this child is dependent on his parents—should not be separated from them.
      b. Point out that the procedures should be explained in simple terms.
      c. Point out that it is not necessary to outline future activities in the emergency department—the child will not be able to relate to them. Answer specific questions posed by the child.
   3. Child (3 to 5 years old)
      a. Point out that this child is surrounded by fears.
         (1) Child may be afraid of monsters.
         (2) Child may be afraid of aggression.
         (3) Child may be afraid of physical mutilation—for example, the sight of blood may precipitate utter panic.
         (4) Child may associate illness or injury with punishment; may also consider acts of treatment causing pain a form of punishment.
         (5) Child may associate medical personnel with a variety of unpleasant experiences, for example, inoculations.
      b. Discuss the procedures:
         (a) Reassure the child—it is all right for him to cry.
         (b) Explain the procedures to be performed in the field and at the hospital.

NOTES

(c) Cover any bleeding injuries—reassure him that no parts of body are missing.

4. Child (school age)
   a. This child may have the same anxieties as younger children.
   b. He is able to communicate more effectively than younger children.
   c. He responds positively if treated with respect and honesty.
   d. Curiosity usually prevails—describe the procedures or equipment in detail. Information tends to be reassuring.
5. Adolescent
   a. Point out that this is a period of precarious self-esteem.
   b. Point out that the adolescent is forever worrying about real or imagined body defects, for example, pimples, physical shape—injuries compound worries.
   c. Point out that the adolescent's primary concern is whether the present problem will leave a perpetual disability, that is, a scar or a limp.
   d. Point out that the adolescent must receive the same support as a child, but must be presented factual information as an adult.

NOTES

Summary

- Review the knowledge objectives.
- Review the topics discussed.
  - — Approach to the pediatric patient
  - — Patient assessment
    - a. History taking
    - b. Physical examination
  - — Special considerations
- Answer any questions.

UNIT 2 emt-p

PATHOPHYSIOLOGY AND MANAGEMENT

Knowledge Objectives

After completing this module, the student should be able to respond to at least 80 percent* of the following:

2.1.1.K Given a description of a pediatric patient with an upper airway obstruction caused by a foreign object and a list of procedures, the student should be able to select the procedure for removing the foreign object.

2.1.2.K Given a list of statements, the student should be able to select the one that best describes asthma.

2.1.3.K Given a list of statements, the student should be able to select the one that best describes the difference between an acute asthmatic attack and status asthmaticus.

2.1.4.K Given a description of a patient with an acute asthmatic attack and a list of activities, the student should be able to select the activities most appropriate to treat the attack.

2.1.5.K Given a list of statements, the student should be able to select the one that best describes the purpose for administering the following to a patient suffering an acute asthmatic attack:

- Oxygen
- Intravenous fluids
- Bronchodilators
- Sodium bicarbonate

NOTES

*The selection of 80 percent as a passing criterion is arbitrary and can be modified.

2.1.6.K The student should be able to list five pieces of information that should be gathered during a history taking of a patient with an acute asthmatic attack.

2.1.7.K The student should be able to recall those activities that should be performed during the physical examination of a patient with an acute asthmatic attack; for example, auscultate lungs.

2.1.8.K Given a list of dosages in milligrams per kilogram, the student should be able to select the correct dosage of epinephrine to be administered to a child suffering from an asthmatic attack.

2.1.9.K Given a list of statements, the student should be able to select the one that best describes the definition and cause of bronchiolitis.

2.1.10.K Given a list of statements, the student should be able to select the one that describes the difference between asthma and bronchiolitis.

2.1.11.K Given a list of activities, the student should be able to select the one(s) that describes the treatment for bronchiolitis.

2.1.12.K Given a list of statements, the student should be able to select the one that best describes the definition and cause of laryngotracheobronchitis (croup).

2.1.13.K Given a list of statements describing the sounds produced by a child with airway problems, the student should be able to select the sounds associated with croup.

2.1.14.K Given a list of age groups, the student should be able to select the age group that is usually associated with croup.

2.1.15.K Given a list of activities, the student should be able to select the one(s) that best describes the treatment of a patient with croup.

NOTES

2.1.16.K Given a list of statements, the student should be able to select the one that best describes the definition and cause of epiglottitis.

2.1.17.K Given a list of signs and symptoms, the student should be able to select the ones that are associated with epiglottitis.

2.1.18.K Given a list of statements, the student should be able to select the one that best describes why the child suffering from epiglottitis is in possible grave danger.

2.1.19.K Given a list of activities, the student should be able to select the one(s) that best describes the treatment for a patient with epiglottitis.

2.2.1.K Given a list of definitions, the student should be able to select the one that best defines the "sudden infant death syndrome."

2.2.2.K Given a list of age groups, the student should be able to select the age groups usually associated with the sudden infant death syndrome.

2.2.3.K Given a list of activities, the student should be able to select the one(s) that describes appropriate treatment for the sudden infant death syndrome.

2.3.1.K The student should be able to recall four pieces of information that should be gathered when taking a history of a patient with seizures.

2.3.2.K Given a list of activities, the student should be able to select the one(s) that are appropriate during the physical examination of a patient with seizures.

2.3.3.K Given a list of statements, the student should be able to select the one(s) that best differentiates a single convulsion from status epilepticus.

2.3.4.K Given a list of activities, the student should be able to select the ones that are appropriate treatments for a patient with status epilepticus.

NOTES

2.3.5.K Given a list of actions, the student should be able to select the action associated with diazepam.

2.3.6.K Given a list of dosages in milligrams per kilogram, the student should be able to select the dosage of diazepam to be administered to a child in status epilepticus.

2.3.7.K Given a list of causes, the student should be able to select the most common common cause of death associated with seizures.

2.4.1.K Given a list of definitions, the student should be able to select the one that best defines the "battered child."

2.4.2.K Given a list of circumstances, the student should be able to select those circumstances that should elicit suspicion concerning a probable battered child.

2.4.3.K Given a list of activities, the student should be able to select the ones that describe the best procedures for managing a situation involving a battered or sexually molested child.

Instructor Activities

Assign the material referred to below during the class period immediately before beginning the unit:

- Chapter 12, Unit 2, of the *Text*
- Knowledge objectives for this unit

Prepare a lecture and discussion session following the content outline on page XII-15. Provide any slides, overlays, or diagrams. Include the following activities during the presentation:

- Review the knowledge objectives.
- Inform the students there will be no demonstrations or practice sessions in this unit.
- Present case studies of pediatric patients in various age groups, emphasizing the points that are different in assessing a pediatric and an adult patient.
- Ask for questions.

Test the students upon completion of the entire module, using the objectives as a guide.

NOTES

Equipment and Materials

Equipment—Educational

Chalkboard and chalk

Materials

Knowledge objectives (optional)
Text

Content Outline

Introduction

- Review the knowledge objectives.
- Review the topics to be discussed:

  — Respiratory emergencies
  — Sudden infant death syndrome
  — Seizures
  — Battered child

- Discuss the purpose.

  — Most emergencies involving infants and children have been discussed.
  — Problems either unique to children or very common in children are included.
  — Pediatric dosages vary.

2.1. Respiratory emergencies

A. Obstructed airway
   1. Review Module III, Unit 3, including signs and symptoms of airway obstruction.
   2. Discuss the principles of management.
      a. Review how to open an airway (manual methods).
         (1) Backward tilt of the head
         (2) Triple airway maneuver

NOTES

b. Review how to clear the airway manually.
   (1) Finger sweep
   (2) Suction
   (3) Direct laryngoscopy and forceps
c. Review how to deliver blows to the back.

B. Asthma

1. Define it as severe bronchoconstriction.
2. Point out that it is a common problem among children.
3. Point out that it is often triggered by anxiety or upper respiratory infection.
4. Point out that 50 percent of asthmatic children usually "outgrow" the problem.
5. Discuss the types:
   a. Acute asthmatic attack
      (1) Point out that it is characterized by spasms and constriction of the bronchi.
      (2) Point out that it is associated with edema and congestion of the lining of the bronchi.
      (3) Point out that it prevents a normal air flow, especially on exhalation.
      (4) Point out that the lungs become hyperinflated.
      (5) Point out that because of the condition, the patient develops:
         (a) Hypoxemia
         (b) Hypercarbia
         (c) Acidosis—causes further bronchoconstriction
         (d) Dehydration
      (6) Point out that management includes:
         (a) Administration of bronchodilators
         (b) Administration of fluids
         (c) Administration of oxygen
         (d) Administration of sodium bicarbonate
   b. Status asthmaticus
      (1) Describe it as a severe asthmatic attack that does not respond to epinephrine.
      (2) Point out that it is considered a dire medical emergency.
6. Discuss a patient assessment.
   a. Patient history—establish the following:

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(1) How long has the patient been wheezing?
(2) How much fluid has the patient had during attack?
(3) Has the patient had any recent infections?
(4) Were there medications taken recently?
(a) When?
(b) How much?
(5) Does the patient have any allergies?
(6) Has the patient been hospitalized for asthma before?
(a) When?
(b) How often?

b. Physical examination—evaluate the following (review chart, *Text*, Ch. 12, Unit 2, "Severity of Asthma"):
(1) General appearance
(a) Patient may be sitting or lying—will usually prefer to sit.
(b) Patient may be distressed.
(c) Patient may appear exhausted.
(2) State of consciousness
(3) Vital signs
(a) Blood pressure—may fall
(b) Pulse—may increase in rate and decrease in strength
(c) Respirations—respiratory distress
(4) Skin and mucous membranes—evidence of dehydration
(5) Thorax
(a) EMT must assess respiratory excursion.
(b) EMT must assess lung sounds for the entire chest.

c. Treatment
(1) Administer humidified oxygen.
(2) Initiate an intravenous (IV) line (dextrose in water or dextrose in normal saline).
(a) Winged infusion needle
(b) Rate = 5–15 millilters per kilogram per hour (ml/kg/h)
(3) Administer epinephrine 1:1000.
(a) Review subcutaneous injection.

NOTES

(b) Discuss the dosage = 0.01 milligrams per kilogram (mg/kg).
(c) Point out that maximum dose is 0.5 mg.
(d) Point out that this drug may be harmful if administered in conjunction with other bronchodilators.

(4) If available, use an aerosolized bronchodilator.
(a) Racemic epinephrine (Vaponefrin)
(b) Isoetharine (Bronkosol)

(5) If ordered, administer:
(a) Sodium bicarbonate
(b) Aminophylline
(c) Hydrocortisone

(6) Monitor the cardiac rhythm.

(7) Transport the child in a sitting position or whatever position is most comfortable.

C. Bronchiolitis

1. Define it as inflammation of the bronchioles caused by viral infection.
2. Point out that it is seen in children under 2 years of age.
3. Point out that it has the same clinical picture as asthma, but it does not respond to epinephrine.
4. Point out that it is differentiated through history taking—determine:
   a. If there is a family history of asthma or allergies
   b. Child's history of allergies
   c. Whether the child has been ill with a low-grade fever
5. Discuss the physical examination—check for:
   a. Evidence of infection
   b. Evidence of respiratory distress
   c. Wheezing
6. Discuss the treatment:
   a. Administer humidified oxygen.
   b. Position the child in the most comfortable position, usually semisitting.
   c. If ordered, as a "precaution":
      (1) Administer epinephrine
      (2) Prepare intubation equipment
   d. Monitor the cardiac rhythm.
   e. Transport.

NOTES

D. Croup (laryngotracheobronchitis)

1. Define it as a viral infection of the upper airways.
2. Point out that it usually occurs in children 6 months to 4 years of age—it is rarely seen in older children.
3. Point out that the infection leads to airway obstruction by causing edema beneath the glottis.
4. Point out that the child with croup is hoarse, with high-pitched stridor, and a whooping sound on inspiration.
5. Point out that the child is usually in bed, in an upright position; he will not tolerate attempts to be placed in the supine position.
6. Point out that attacks usually occur during the night.
7. Discuss the treatment:
   a. Administer humidified oxygen.
   b. Initiate an IV—dextrose in water at a rate of 5 ml/kg/h.
   c. Position the child in the most comfortable position.
   d. Transport.
   e. Remember that similar sign/symptoms may imply an upper airway obstruction by a foreign object; if so:
      (1) Cautiously visualize the airway with a laryngoscope.
      (2) Use extreme gentleness—may cause laryngospasm.

E. Epiglottitis

1. Point out that it is caused by bacterial infection.
2. Point out that it leads to swelling of the epiglottis, which may cause airway obstruction.
3. Point out that the clinical picture is the same as croup, except:
   a. Patient with epiglottitis is usually over 4 years of age.
   b. There is pain on swallowing.
   c. Drooling is frequent.
   d. Patient may have a high fever.
4. Point out that children are in grave danger from complete airway obstruction.
5. Discuss treatment:
   a. Administer humidified oxygen.

NOTES

b. Initiate an IV—dextrose in water at a rate of 5 ml/kg/h.
c. Position the child in the most comfortable position.
d. Transport immediately—problem can only be dealt with in a medical facility; for example, 50 percent of the cases require a tracheotomy or intubation.
e. Do not attempt to visualize the throat with a tongue blade, laryngoscope, or any other implement.

2.2. Sudden infant death syndrome

A. Point out that it is also called "crib death."
B. Define it as a sudden, unexplained, and unexpected death of an infant, where a thorough autopsy fails to reveal the cause of death.
C. Point out that it usually affects infants 2 weeks to 6 months of age.
D. Discuss the clinical picture:
   1. Cannot be predicted or prevented
   2. Usually occurs during sleep
   3. Includes apparently normal, healthy infants
E. Discuss the treatment:
   1. There is usually nothing that can be done because of the time elapsed between death and discovery of death.
   2. If the arrest is immediately noticed, an EMT should initiate cardiopulmonary resuscitation.
   3. Usually, efforts must be directed to assisting and reassuring the parents and family.
   4. In most instances, a coroner must be notified.

2.3. Seizures

A. Point out that the conditions leading to seizures in adults also may lead to seizures in children; that is, head trauma, hypoxia, hypoglycemia, especially fever.
B. Discuss management—similar to that of an adult patient.
C. Discuss the patient assessment.
   1. History taking—determine:
      a. Has the patient had seizures before? How often? Are they always associated with a fever?
      b. What were the number of seizures today?

NOTES

c. Has patient a history of:
   (1) Head trauma?
   (2) Diabetes?
   (3) Recent headache or stiff neck?
d. What are the patient's present medications?
e. What is the appearance of the seizures—that is, generalized or local?

2. Physical examination—evaluate:
   a. Level of consciousness
   b. Fever or dehydration
   c. Signs of injury
   d. Neurologic function (review evaluation procedures—Module VII)

D. Discuss the types.
1. Single convulsion
   a. Point out that it is usually self-limited.
   b. Point out that no therapy is required.
   c. Discuss management:
      (1) Maintain an airway.
      (2) Protect the child from injury.
2. Status epilepticus
   a. Define it as a prolonged seizure or multiple seizures without a lucid interval between seizures.
   b. Emphasize that it represents a true medical emergency.
   c. Discuss management:
      (1) Place the child on the floor or bed away from furniture—not supine.
         (a) Prevent self-inflicted injuries.
         (b) Do not restrain the patient.
      (2) Maintain an airway—do *not* jam a bite block between clenched teeth.
      (3) Administer oxygen—most deaths from seizures are anoxic deaths.
      (4) Initiate an IV—dextrose in water; secure the IV to avoid dislodgement from pulling and thrashing.
      (5) If febrile, sponge with tepid water.
      (6) If the seizure does not stop, obtain order to administer diazepam—0.3 mg/kg.

NOTES

NOTE: Respiratory arrest may follow—be prepared

(7) Transport to the hospital.

(a) Maintain an airway and administer oxygen.

(b) Protect the child from injury.

NOTES

2.4. The battered child

A. Define this as a child who suffers deliberately induced injuries, usually induced by parents.

B. Point out that there are an estimated 30,000–50,000 cases of child abuse each year.

C. Discuss the clinical picture.

1. Adult's (usually a parent) behavior may include:
   a. Nervousness
   b. Reluctance to volunteer information or will give contradictive information
   c. Hostility toward child
2. Child's circumstances that should elicit suspicion:
   a. The child who has multiple extremity fractures.
   b. The child who has multiple bruises and abrasions, especially about the trunk and buttocks. Be particularly suspicious if there are old bruises in addition to the fresh ones.
   c. The child who has burns, especially cigarette burns or scalds (from hot bath water in infants).
   d. The child who has multiple soft-tissue injuries, or injuries about the mouth from having a bottle forced into it.
   e. The child who is poorly nourished and not taken care of.
   f. The child who has been involved in a bizarre accident, according to the history.
   g. The child who seems apathetic and does not cry despite his injuries.
   h. The child who has been seen in several emergency rooms recently for related complaints.
   i. The child whose injury occurred several days before you were called.

D. Discuss management:

1. Point out that management begins with the recognition of the abused child based on:

a. Patient history
b. Physical examination
(1) Search for lacerations, abrasions, trauma, evidence of internal injury.
(2) Conduct surveys as normal; do *not* voice suspicions or confront parents.

2. Point out that an EMT should treat the child for all injuries as appropriate.
3. Point out that an EMT should prepare a report for medical staff.
a. Child's injury
b. Observation at the scene
(1) Condition of the home
(2) Any objects used to hurt child, for example, belts, straps

E. Discuss a special case—sexually molested child.
1. Point out that this situation requires the utmost tact.
a. Child will be frightened and upset.
b. Parents will be very anxious.
c. Child and parents need to be reassured.
2. Discuss the procedures.
a. Be calm and understanding.
b. Develop a complete report.
(1) Description of the attacker
(2) Nature of the attack
c. Conduct a primary assessment.
d. Do a rapid secondary assessment.
e. Treat only those injuries requiring immediate attention before transport.

NOTES

UNIT 3 emt-p
TECHNIQUES OF MANAGEMENT

NOTES

Knowledge Objectives

After completing this module, the student should be able to correctly respond to at least 80 percent* of the following:

3.1.1.K Given a list of head positions, the student should be able to recognize the position that is most likely to cause an airway obstruction in the infant.

3.1.2.K Given a list of sizes of breath, the student should be able to recognize the correct size breaths in administering mouth-to-mouth resuscitation to an infant or small child.

3.1.3.K Given a list of the number of ventilations per minute, the student should be able to recognize the correct number of ventilations used per minute when artificially ventilating an infant or small child.

3.1.4.K Given a list of number of breaths, the student should be able to select the number of breaths to be delivered in the first ventilations when initiating cardiopulmonary resuscitation in an unwitnessed cardiac arrest situation.

*The selection of 80 percent as a passing criterion is arbitrary and can be modified.

NOTES

3.1.5.K Given a list of arteries, the student should be able to identify the artery that is easily accessible and proximal to the heart.

3.1.6.K Given a list of the steps involved in cardiopulmonary resuscitation arranged in various sequences, the student should be able to select the correct sequence.

3.1.7.K Given a list of bones and structures and a description of the location of a bone or structure, the student should be able to recognize the correct bone or structure that the description locates. The description will locate the following:

- Sternum
- Xiphoid process
- Spine

3.1.8.K Given a list of bones or structures, the student should be able to recognize the two bones or structures between which the heart is squeezed during compressions.

3.1.9.K Given lists of hand positions, methods of applying pressure (location of hands and fingers), and depths of chest compressions, the student should be able to select the correct hand positions, methods of applying pressure, and depth of chest compression (in inches) for an infant and a small child.

3.1.10.K Given a list of ratios of ventilations to compressions, the student should be able to recognize the correct ratio when performing cardiopulmonary resuscitation on an infant or small child.

3.1.11.K Given a list of rates in seconds or a number of compressions per minute, the student should be able to recognize the correct number or rate the chest is compressed when performing cardiopulmonary resuscitation on an infant or small child.

NOTES

3.1.12.K Given a list of physical changes, the student should be able to recognize the changes resulting from effective cardiopulmonary resuscitation.

3.1.13.K Given an infant in cardiac arrest and a list of activities, the student should be able to select the activities that are the most appropriate treatment for the infant.

3.1.14.K Given an infant in cardiac arrest and the weight of the infant, the student should be able to recall the dosage in watt-seconds of the countershock.

3.1.15.K Given a list of dosages in milliequivalents per kilogram, milliliters per kilogram, or milligrams per kilogram, the student should be able to select the correct dosage for the following drugs:

- Sodium bicarbonate
- Epinephrine
- Atropine
- Lidocaine
- Calcium chloride

3.1.16.K For each of the drugs listed in 3.1.15.K, the student should be able to recall the indication and action of each drug.

3.2.1.K Given a list of five written statements, the student should select two that are purposes of an intravenous infusion.

3.2.2.K Given a minimum of five situations presented either orally or in writing indicating various combinations of patient conditions, vital signs, and identified problems, the student should be able to recall whether an IV should be initiated and what fluid should be used.

3.2.3.K Given a diagram of the superficial veins of the forearm and a diagram of the superficial veins of the scalp, the student should be able to identify and locate 75 percent of the veins. A list of veins will be provided.

NOTES

3.2.4.K Given a list of procedures, the student should be able to select the one that best describes the procedure for initiating an IV using:

- Scalp vein
- Hand vein

3.2.5.K Given a list of needle sizes, the student should be able to select the appropriate needle size to be used when starting the IV in:

- Scalp vein
- Hand vein

3.2.6.K Given a list of statements, the student should be able to select the one that best describes the purpose for flushing the needles with saline before initiating the IV.

3.3.1.K Given a list of statements, the student should be able to identify the one that best describes the purpose of endotracheal intubation.

3.3.2.K Given a list of situations describing patients with airway maintenance problems, the student should be able to select those situations in which endotracheal intubation is indicated.

3.3.3.K Given a list of equipment, materials, and medication, the student should be able to select those items that must be available before intubation can begin.

3.3.4.K Given a list of various sizes of laryngoscope blades and intubation tubes, the student should be able to select the appropriate size for a given-sized child.

3.3.5.K Given a list of errors, the student should be able to identify common errors involved in endotracheal intubation.

3.3.6.K Given a diagram of an endotracheal tube for infants, the student should be able to label and describe the function of all component parts.

NOTES

3.3.7.K Given that a patient requires endotracheal intubation, the student should be able to list the correct procedure to be followed, including all steps in the proper sequence.

3.3.8.K Given a list of anatomical differences, the student should be able to select those differences that differentiate intubation in an adult and infant.

3.3.9.K Given a list of time intervals, the student should be able to identify the maximum time interval usually available to start and complete the endotracheal intubation procedure.

3.3.10.K Given a list of advantages, the student should be able to identify the advantages of endotracheal intubation over other cannulating and noncannulating methods of airway control.

3.3.11.K Given a list of disadvantages, the student should be able to identify the disadvantages of endotracheal intubation over other cannulating and noncannulating methods of airway control.

3.3.12.K Given a list of respiratory structures, the student should be able to identify those structures that must be visualized, and in what order, before the insertion of the endotracheal tube.

Skill Objectives

After completing this module, the student should be able to correctly perform each of the skill objectives. "Correctly" will be defined by the instructor during the lecture and demonstration sessions. Skill evaluation sheets are included in the module.

3.1.1.S Given an infant manikin, the student should be able to correctly perform cardiopulmonary resuscitation on the infant manikin. The criteria for successful performance established by the American Heart Association should be used when evaluating the student's performance.

3.3.1.S Given an infant intubation manikin, laryngoscope and blade, endotracheal tube, and stethoscope, the student should be able to demonstrate the procedure for tracheal intubation of an infant. The intubation will be considered successful if the time from the last ventilation before intubation and the first ventilation after intubation is less than 30 seconds and the procedure is atraumatic.

NOTES

Instructor Activities

Assign the material referred below during the class period immediately before beginning the unit:

- Chapter 12, Unit 3, of the *Text*
- Skill and knowledge objectives for this unit

Prepare a lecture and demonstration session following the content outline on page XII-32. Provide any slides, overlays, or diagrams. Include the following activities during the presentation:

- Review the skill and knowledge objectives.
- Inform the students there will be two demonstrations and one practice session dealing with infant resuscitation and tracheal intubation of an infant.
- Have all equipment listed in the Equipment and Materials section available for inspection.
- Present a demonstration of infant resuscitation using the infant manikin.
- When presenting the section on intravenous therapy, review the technique using a slide presentation or film. The skill of external jugular catheterization should be presented using the infant resuscitation manikin as a model. Illustrations should also be used to identify scalp and hand veins of the infant.
- Demonstrate the procedure of tracheal intubation using the intubation manikin.
- Answer any questions.

Monitor the students while they practice the demonstrated skills. Be available during the practice session to answer any questions and to correct any mistakes.

Test the students upon completion of the entire module, using the objectives as a guide.

Equipment and Materials

Equipment—Educational

Infant resuscitation manikin
Infant intubation manikin

Equipment—Medical

Over-the-needle catheter
Winged infusion needles
Laryngoscope with assorted blades
Endotracheal tube set
Stethoscope
Tape
Bag-valve mask with 15-millimeter adapter
Suction catheter

Materials

Skill objectives (optional)
Knowledge objectives (optional)
Testing materials
Text

Content Outline

Introduction

- Review the skill and knowledge objectives.
- Introduce the topics of discussion:

  — Cardiopulmonary resuscitation
  — IV insertion
  — Endotracheal intubation

3.1. Cardiopulmonary resuscitation (CPR) (review from Module VI)

A. Review the following:
   1. Purpose of CPR
   2. Signs of effective CPR

NOTES

3. Procedure for interrupting CPR

B. Introduce Demonstration 3.1.1.S

C. Discuss definitive therapy (cardiac arrest).

1. Administer oxygen as soon as possible.
2. Initiate an IV lifeline (3.2 of the content outline).
3. Monitor cardiac activity—if ventricular fibrillation.
   a. Countershock.
   b. Note dosage.

Patient	*Weight*	*Watt-seconds*
Infant	12 kg	25–50
Small child	12–25 kg	100
Large child	25 kg	100–200

4. Administer drugs.
   a. Sodium bicarbonate
      (1) To correct acidosis
      (2) 1–2 milliequivalents per kilogram IV push
   b. Epinephrine 1:10,000
      (1) For asystole and fine ventricular fibrillation
      (2) 0.1 ml/kg, IV push
   c. Atropine
      (1) For bradycardia
      (2) 0.01 mg/kg
   d. Lidocaine
      (1) For ventricular tachycardia, frequent premature ventricular contractions, or recurrent ventricular fibrillation after countershock
      (2) 1 mg/kg, IV push (may repeat every 5-10 minutes; maximum dose, if given repeatedly, is 5 mg/kg)
   e. Calcium chloride (10 percent, 100 mg/ml)
      (1) For asystole or electromechanical dissociation
      (2) 1 ml/5 kg, slow IV (0.2 ml/kg)

3.2. Intravenous techniques (review from Module III)

A. Review the procedure—same as for an adult.

B. Discuss site selection.

1. Scalp veins
   a. Point out that these veins are well suited for young infant.

NOTES

(1) Readily accessible
(2) Easily visualized

b. Point out that they are very superficial veins.
c. Discuss winged infusion needle used—No. 21 or No. 23 gage.
d. Point out that the procedure is the same as for an adult.

2. Hand veins
a. Point out that these veins are not always easy to find on small infants.
b. Discuss winged needle or over-the-needle catheter used—No. 22 gage.
c. Point out that the procedure is the same as for an adult, except:
(1) Needle is flushed with saline prior to insertion
(2) Saline is slowly injected through the needle to evaluate infiltration

C. Discuss the equipment:
1. IV fluid bottles should not exceed 250 ml.
2. Microdrip apparatus should be used.
3. Flow rates are the following:
a. Dextrose in normal saline—5 ml/kg/h (maintenance for infant; almost twice for young child)
b. Dextrose in normal saline—10–15 ml/kg/h (shock treatment)

3.3. Endotracheal intubation

A. Point out that the technique is similar to that used for an adult.
B. Point out that the differences are caused by anatomical differences.
1. Tongue is relatively larger.
2. Glottis is higher.
3. Vocal cords slant upward and backward.
C. Discuss the selection of equipment.
1. Blade (review the sizes of blades to be used)
2. Tube (review the sizes of tubes to be used)
D. Introduce Demonstration 3.3.1.S
E. Introduce Practice Session 1

NOTES

Summary

- Review the skill and knowledge objectives.
- Review the topics of discussion:
  - — CPR
  - — IV insertion
  - — Endotracheal intubation
- Answer any questions.

NOTES

Demonstration 3.1.1.S: Infant Resuscitation

NOTES

Equipment

Infant manikin

Procedure

Demonstrate procedure step by step, using an infant manikin. Emphasize each step, including critical errors that can be made. Be sure that each student can see clearly.

Steps

1. Establish the unresponsiveness of infant:
   a. Shake or tickle the feet.
   b. Allow 5–10 seconds for a response.
2. Position the infant's head and neck to establish an airway:
   a. Show the position of your hands on the infant's head and neck.
   b. Hyperextend the neck but not as much as for an adult (explain why).
   c. Support the infant's shoulders.
3. Check the breathing:
   a. Look, listen, and feel for air exchange.
   b. Allow a minimum of 5 seconds to evaluate—but not more than 12 seconds.
4. If breathing is absent:
   a. Make an airtight seal over the infant's mouth and nose.
   b. Blow small puffs of air into the infant's mouth.
5. Ventilate the infant:
   a. Using four quick small puffs.
   b. Do not check for a rise and fall of the chest with each breath.
6. Check the pulse:
   a. Use the carotid, femoral, or apical artery.
   b. Allow a minimum of 10 seconds to evaluate the pulse—but not more than 12 seconds.
7. If a pulse is present:
   a. Ventilate once every 3 seconds.
   b. Check the pulse periodically.

8. If a pulse is absent determine the location of your fingers to be placed—at the middle of the sternum.
9. Using the tips of two fingers:
   a. Compress the chest 1/2 to 3/4 inch.
   b. Check the rate—100 times per minute.
10. Interpose ventilation:
   a. Do so after every five compressions at a rate of 20 per minute.
   b. Do not pause for ventilation.

NOTE: After the demonstration, ask the students if they have any questions or if they would like to see part of the demonstration repeated. Depending on the approach and schedule, the instructor may want the students to practice at this time or at least have one student repeat the demonstration, with the instructor talking the student through the skill, pointing out the errors.

NOTES

Demonstration 3.3.1.S: Endotracheal Intubation on an Infant

NOTES

Equipment

Infant intubation manikin
Laryngoscope with assorted blades
Endotracheal tube set
Stethoscope
Tape
Bag-valve-mask unit with adapter elbow
Suction catheters
Infant manikin

Procedure

Place all equipment in front of the class so it is easily accessible.

Make sure all students can see.

As the skill is demonstrated, describe what is being done. Specifically, detailed directions should be provided, including such things as:

- Patient teaching
- Hand position and movements
- Probable results
- Complications
- Critical errors

Steps

1. Organize the equipment.
2. Preoxygenate the infant with a bag-valve mask with an oxygen supplement. Emphasize the problems of using a bag-valve-mask unit on a small infant.
3. Position the infant on a firm surface with the neck flexed and the head elevated on a folded blanket, so that the head is in the sniffing position (use an infant resuscitation manikin to illustrate positioning).
4. Assemble the laryngoscope blade and handle. Check the light to be sure it is operative.

5. Position the laryngoscope and visualize the vocal cords. Emphasize:
   a. Position of the blade.
   b. Position of the tongue.
   c. Insertion of the blade.
6. Insert and position the tube. Emphasize:
   a. Selection of the tube.
   b. Position of the tube and bevel.
   c. Insertion of the tube past the vocal cords.
   d. Checking the location of the tube—auscultation of the lung fields.
   e. Securing and marking the tube position.

NOTE: After the demonstration, ask the students if they have any questions or if they would like to see part of the demonstration repeated. Depending on the approach and schedule, the instructor may want the students to practice at this time or at least have one student repeat the demonstration, with the instructor talking the student through the skill, pointing out the errors.

NOTES

Practice Session 1

NOTES

Equipment

Infant resuscitation manikin
Infant intubation manikin
Laryngoscope with assorted blades
Endotracheal tube set
Stethoscope
Bite block
Tape
Bag-valve mask with 15-millimeter adapter

Skills

3.1.1.S Infant resuscitation
3.3.1.S Intubation of an infant

Procedure

The students should be divided into two groups. The first group should practice infant resuscitation, and the second group should practice intubation of an infant.

Student's Name _____

Date _____

Pass 1 2 3

Fail 1 2 3

Skill Evaluation 3.1.1.S: Infant Resuscitation

Place an "X" in the appropriate column to indicate the steps that are incorrect, out of sequence, or omitted. The student should be given three attempts to perform the skill.

Equipment

Infant manikin

Procedure

Under the supervision of the instructor, the student will demonstrate the procedure for infant resuscitation.

Steps

___ ___ ___ A. Establish unresponsiveness of the infant by shaking him or tickling his feet, allowing 5 to 10 seconds for a response.

___ ___ ___ B. Position the infant's head and neck to establish an airway, remembering not to hyperextend the neck as much as for an adult.

___ ___ ___ C. Check the breathing using look, listen, and feel. Allow a minimum of 10 seconds to evaluate the breathing.

___ ___ ___ D. If breathing is absent, make an airtight seal over the infant's mouth and nose, and blow small puffs of air into the infant's mouth.

NOTES

___ ___ ___ E. Ventilate the infant with four quick puffs. The student should not glance to check the rise and fall of the chest for each breath.

___ ___ ___ F. Check for carotid, femoral, or apical pulse. Allow a minimum of 10 seconds to evaluate the pulse.

___ ___ ___ G. If the pulse is absent, determine the location for fingers to be placed on the middle of the sternum.

___ ___ ___ H. Using the tips of two fingers, compress the chest 1/2 to 3/4 inch at a rate of 100 times per minute.

___ ___ ___ I. Interpose ventilation after every five ventilations with no pause.

NOTES

Student's name _____

Date _____

Pass 1 2 3

Fail 1 2 3

Skill Evaluation 3.3.1.S: Endotracheal Intubation on an Infant

Place an "X" in the appropriate column to indicate the steps that are incorrect, out of sequence, or omitted. The student should be given three attempts to perform the skill.

Equipment

Infant intubation manikin
Laryngoscope with assorted blades
Endotracheal tube set
Stethoscope
Tape
Bag-valve-mask unit with adapter elbow
Suction catheters
Infant manikin

Procedure

Under the supervision of the instructor, the student will demonstrate the procedure for tracheal intubation on an infant manikin.

The instructor will inform the student that this is a timed evaluation. The student will have 30 seconds to intubate the manikin and ventilate one time.

Steps

___ ___ ___ A. Continue ventilations during the preparation for direct laryngoscopy and intubation. (Can be performed by the evaluator.)

___ ___ ___ B. Position the infant.

___ ___ ___ C. Assemble the laryngoscope blade and handle.

NOTES

___ ___ ___ D. Check the light to be sure it is operative.

___ ___ ___ E. Select the proper size tube.

___ ___ ___ F. Insert the laryngoscope with the tongue to the left.

___ ___ ___ G. Visualize the epiglottis, then the vocal cords.

___ ___ ___ H. Insert the tube so that cuff lies 5 to 10 millimeters past the cords.

___ ___ ___ I. Remove the laryngoscope blade from patient's mouth.

___ ___ ___ J. Ventilate the patient with a bag-valve unit.

___ ___ ___ K. Check the lung fields for breath sounds.

___ ___ ___ L. Mark the tube with a pencil.

___ ___ ___ M. Tape the tube into position.

NOTES

UNIT 4 emt-p

NEONATAL TRANSPORT*

NOTES

Transport of the high-risk or critically ill newborn requires many specialized skills and thorough training in a neonatal intensive care unit. It is beyond the scope of this manual to provide all the information necessary for such an endeavor. Those paramedics who will become involved in the transport of high-risk neonates should receive additional, hospital-based training under the supervision of qualified pediatricians and neonatal intensive care nurses.

Specifically, the training should include:

- Handling and management of neonates, including airway management and resuscitative techniques on a neonatal intensive care unit, under the supervision of specially trained physicians or nurses.
- Learning the procedure for the operation of an isolette/incubator, including maintenance of a temperature- and oxygen-concentration-controlled environment.
- Learning the procedures and activities of all members of the neonatal transport team.
- Clinical experience in neonatal unit under the direct supervision of neonate specialists.

It is suggested that the course coordinator meet with the personnel responsible for neonatal transport activities, and determine the training needs for the emergency medical technicians.

*Indicates optional skill.

UNIT 5

CLINICAL EXPERIENCE

emt-p

NOTES

Description of Unit

In the previous units, the students are trained to perform skills in simulated situations in the classroom. The purpose of the clinical experience is to provide the student with the opportunity to become proficient in the skills presented in the classroom setting.

If a number of modules are being presented together, it is not necessary for the clinical experience to be presented after each module. The clinical experience associated with each module can be combined and presented upon completion of the classroom sessions.

Objectives

The following objectives are proposed for the pediatric unit. Because of the patient availability, it is possible that all skills listed below may not be performed by the student, but as many skills as possible should be observed and practiced under the supervision of the preceptor.

During the experience in the pediatric unit, the student will have the opportunity to practice on actual patients under direct supervision and to demonstrate, with proficiency and to the satisfaction of the preceptor, each of the following:

- Perform patient assessment including, at a minimum, a review of the patient's chart, taking vital signs, and auscultating chest and abdominal sounds.
- Demonstrate the procedure for endotracheal intubation.

- Prepare and administer intramuscular and intravenous medications.
- Observe the action of the pharmacological agent administered.
- Perform peripheral IV insertion using a winged infusion needle.
- Assist in the management of febrile and seizure patients.

NOTES

Upon completion of the clinical experience, the trainee should be involved in a supervised internship on the vehicle. During this internship, the trainee will be supervised by a preceptor (physician, nurse, or certified EMT) in the skills presented during the training program. Guidelines for this internship are identical to those presented for the other clinical areas and should be used as a reference. Specific guidelines for the internship and sample checklist may be found in Appendix A of the *Instructor Lesson Plans.*

Preceptor Activities

Review the objectives with the course coordinator and discuss which objectives are to be included in the unit activities. If the preceptor has any questions concerning specific skills or procedures, he should be referred to the appropriate module for a review of the materials presented to the student.

Have the student sign in and determine his proper attire, for example, sterile greens.

Review the rules and operating procedures within the unit, making certain to define the student's role within the unit. Any special regulations concerning the student's activities should be defined.

Define those skills that will and will not be included in this instructional unit, but were discussed during the classroom activities.

Review the history, diagnosis, complications, and treatment of each patient in the unit. The activities of the student should not be limited to those specifically defined in the objectives.

For each activity, demonstrate the skill initially, coach the student through the skill at least one time, and then observe the student as he performs the skill.

Supervise the student when he is performing activities within the unit. The preceptor should review critically the student's technique and suggest corrections when appropriate.

Assist and evaluate the student until he is competent in each activity on the checklist.

Answer any of the student's questions concerning activities in the unit or specific patients and their conditions.

Review the objectives for this instructional unit periodically, and discuss the student's progress with respect to the items on the checklist.

Mark the student's activities checklist after each clinical session. The checklist should be marked indicating the number of total observations(O), total attempts to perform the activity by the student (T), and the number of successful attempts (S) for each activity. Once the student has successfully demonstrated the skill to the satisfaction of the preceptor, the session number during which the preceptor made the evaluation should be entered in the "Completed" column. Any comments should be listed in the appropriate space. Specifically, comment should be made if the student does not become proficient at any given skill. Once the student has successfully demonstrated his proficiency at a given skill, however, he should still continue to perform the skill while in the unit.

NOTES

Student Activities

The student should:

- Report to the specialty unit on his scheduled date and shift and "sign in" with the supervisor
- Review the rules and operating procedures within the unit with the preceptor, making certain that his role in the unit is defined
- Review the history, diagnosis, complications, and treatment of each patient in the unit
- Observe and participate in unit activities as directed by the preceptor (If the student observes a technique or procedure performed differently from its presentation during the classroom activities, he may question the preceptor about differences observed, but remember that the techniques presented during the lecture may not be the only correct method.)
- Perform each activity on the checklist (when appropriate) under the direct supervision of the preceptor (If the student is unsure of the activity, the preceptor will demonstrate the skill.)
- Review each activity performed with the preceptor, and be sure the preceptor critiques his performance
- Be sure the preceptor marks the checklist after each clinical session

- Develop a log on each patient seen during the experience—the log should include the following information as a minimum:
  - — Patient's record identification—use identification number rather than patient's name
  - — Major problem—that is, trauma, acute appendicitis
  - — Complications
  - — Skills and activities observed
  - — Skills performed—that is, initiated IV, monitored cardiac activity

The preceptor and the student should review the objectives in the instructional unit and discuss which activities will be included in the experience.

NOTES

Pediatric Unit

Student's name _____

Completed	Activities (objectives)	Session number 1 O	1 T	1 S	2 O	2 T	2 S	3 O	3 T	3 S	4 O	4 T	4 S	5 O	5 T	5 S	Comments
	Perform patient assessment Blood pressure Pulse Respiration Auscultation of lung sounds Auscultation of abdominal sounds																
	Perform peripheral IV—winged infusion needle																
	Preceptor																
	Date																

Note.—O = observations; T = student attempts; S = successful attempts.

Pediatric Unit—*Con.*

Student's name _____

Completed	Activities (objectives)	Session number 1 O	1 T	1 S	2 O	2 T	2 S	3 O	3 T	3 S	4 O	4 T	4 S	5 O	5 T	5 S	Comments
	Prepare and administer medications Intravenous Intramuscular																
	Observe the action of pharmacological agents administered																List drugs observed
	Preceptor																
	Date																

Note.—O = observations; T = student attempts; S = successful attempts.

Pediatric Unit—*Con.*

Student's name _____

Completed	Activities (objectives)	Session number 1 O	T	S	2 O	T	S	3 O	T	S	4 O	T	S	5 O	T	S	Comments
	Assist in the management of patients Febrile Seizure Other																
	Preceptor																
	Date																

Note.—O = observations; T = student attempts; S = successful attempts.

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